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Notice of Allowability	Application No.	Applicant(s)	
	09/994,446	WALKER, RICHARD C.	
	Examiner	Art Unit	
	Jean B. Corrielus	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/22/07.
2. ☒ The allowed claim(s) is/are 2, 4, 9, 12-27, 31-36, 42-44, renumbered as 2, 3, 4, 6-21, 27, 28, 22-25, 1, 5, 26, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|


 Jean B. Corrielus
 Primary Examiner
 Art Unit: 2611

3-1-07

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Daniel Santos on 2/26/07.

The application has been amended as follows:

IN THE CLAIM:

The claims have been amended as noted in the attached copy of a facsimile communication from the applicant's representative on 2/26/07.

2. The following is an examiner's statement of reasons for allowance: a method and apparatus are disclosed. The closest prior art Jinbo et al US patent No. 6,438,081, and Robinson et al US patent No. 6,624,668, discloses similar method and apparatus. However, Jinbo et al and Robinson does not teach or fairly suggest the limitations recited in claim 33, lines 11-14, and similar limitations recited in claims 19, 23 and 36, respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably


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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jean B Corrielus
Primary Examiner
Art Unit 2611

3-1-07

Patent
Serial No. 09/994,446
Agilent Docket No. 10004017-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: Richard C. Walker)
Serial No.: 09/994,446)
Filed: 11/27/2001) Group Art Unit: 2611
For: MULTI-PHASE SAMPLING) Examiner: CORRIELUS, JEAN B.
_____)

CLAIM AMENDMENTS TO BE MADE BY EXAMINER'S AMENDMENT

In response to a telephone conversation between the undersigned attorney and Examiner Corrielus, the following amendments to the claims were agreed to and it is understood that they will be made by Examiner's Amendment.

CLAIM AMENDMENTS

13. (Currently Amended) The system of claim 43, wherein said circuitry configured to shift at least one of the first, second, or third phases includes first, second and third charge pumps that perform modulo binning of the first, second and third phase error indications, respectively, to obtain first, second and third phase shifting values, and wherein said circuitry is configured to shift at least one of the first, second, or third phases ~~shifts the first, second and third phases~~ in accordance with the obtained first, second and third phase shifting values, respectively.

16. (Currently Amended) The system of claim 15, wherein the ~~apparatus~~ system is incorporated into a receiver, and wherein the phase shifts ~~adjustments~~ cause the first and second clock signals to arrive at the first and second sampling devices, respectively, at particular points in time to thereby cause the first and second sampling devices to sample the first data signal at correct points in time, the first data signal corresponding to a signal transmitted by a transmitter.

17. (Currently Amended) The system of claim 15, wherein the ~~apparatus~~ system is part of a receiver, and wherein the phase shifts ~~adjustments~~ cause the first and second clock signals to arrive at the first and second sampling devices, respectively, at particular points in time to cause the first and second sampling logic to optimally sample the first data signal, the first data signal corresponding to a signal transmitted by a transmitter, the transmitter being a multi-phase system comprising a multi-phase clock generator that generates at least third, fourth, fifth, sixth and seventh clock signals having third, fourth, fifth, sixth and seventh phases, respectively, the third, fourth, fifth, sixth and seventh phases being different from each other, and wherein the phase error determination ~~logic~~ circuitry is also configured to determine one or more phase error indications associated with events occurring in the transmitter, and wherein the phase error indications determined to be associated with events occurring in the transmitter are transmitted by the receiver to the transmitter to enable the transmitter to adjust the third, fourth, fifth, sixth and seventh phases to eliminate phase errors in the third, fourth,

fifth, sixth and seventh clock signals.

18. (Currently Amended) The system of claim 15, wherein the ~~apparatus~~system is part of a transceiver, the transceiver comprising a local receiver and a local transmitter, and wherein the phase shifts~~adjustments~~ cause the first and second clock signals to arrive at the first and second sampling devices, respectively, at particular points to cause the first and second sampling logic to optimally sample the first data signal, and wherein the first data signal corresponds to a signal transmitted by a remote transmitter, the remote transmitter being a multi-phase system comprising a multi-phase clock generator that generates at least third, fourth, fifth, sixth and seventh clock signals having third, fourth, fifth, sixth and seventh phases, respectively, the third, fourth, fifth, sixth and seventh phases being different from each other, and wherein the phase error determination ~~logic~~circuitry is also configured to determine one or more phase error indications associated with events occurring in the remote transmitter, and wherein the phase error indications determined to be associated with events occurring in the remote transmitter are transmitted by the receiver to the remote transmitter to enable the remote transmitter to adjust the third, fourth, fifth, sixth and seventh phases to eliminate phase errors in the third, fourth, fifth, sixth and seventh clock signals, respectively.

22. (Currently Amended) The apparatus of claim 19, wherein the first multi-phase system is a local receiver of a transceiver, the transceiver comprising ~~at the~~ local receiver and a local transmitter, the second multi-phase system corresponding to said local transmitter, the transceiver including routing logic configured to cause the phase error adjustment values obtained for the n clock phases to be sent to said second multi-phase system, and wherein the first data signal sampled by said n sampling devices corresponds to a signal transmitted by the local transmitter.

25. (Currently Amended) The apparatus of claim 23, wherein the first multi-phase system is a local receiver of a transceiver, ~~the transceiver~~ comprising ~~at the~~ local receiver and a local transmitter, the second multi-phase system corresponding to the local transmitter, the transceiver including routing logic configured to cause the phase

error adjustment values obtained for the n clock phases to be sent to said local transmitter to be used by the phase shifting circuitry of the local transmitter to shift the n clock phases in accordance with the phase error adjustment values obtained for the n clock phases.

33. (Currently Amended) A method for sampling signals in a first multi-phase system, the first multi-phase system comprising a multi-phase clock signal generator that generates m clock phases, each clock phase being different, the method comprising the steps of:

sampling a first data signal with n sampling devices, wherein n corresponds to a number of clock phases of a second multi-phase system and wherein m and n are integers that are relatively prime and n is equal to or greater than 3, each sampling device sampling the first data signal when one of the m clock signals is received by the respective sampling device and outputting an output signal;

determining a phase error indication associated with each output of the n sampling devices;

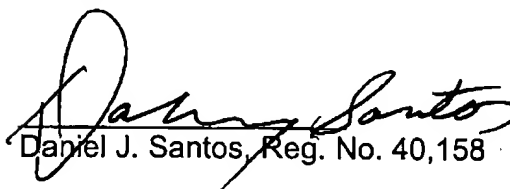
utilizing $m + n$ modulo binning devices to perform binning of the phase error indications associated with the outputs of the $m + n$ sampling devices to obtain phase error adjustment values for the m clock phases and phase error adjustment values for the n clock phases; and

shifting the m clock phases in accordance with the phase error adjustment values obtained for the m clock phases.

35. (Currently Amended) The method of claim 33, wherein the first multi-phase system is a local receiver of a transceiver, the transceiver comprising a local receiver and a local transmitter, the transceiver including routing logic configured to cause the phase error adjustment values obtained for the n clock phases to be sent to said second multi-phase system, the second multi-phase system corresponding to said local transmitter, and wherein the first data signal sampled by said n sampling devices corresponds to a signal transmitted by the local transmitter.

Patent
Serial No. 09/994,446
Agilent Docket No. 10004017-1

Respectfully submitted,


Daniel J. Santos, Reg. No. 40,158

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